

**Abstract**

Silicatein is an enzyme of silicate-forming organisms used for the synthesis of their silicate scaffold. The present invention relates to the use of highly-expressed and highly active recombinant silicatein, silicatein isolated from natural sources after gene induction as well as silicatein-fusion proteins for the synthesis of amorphous silicon dioxide (silicic acids and silicates), siloxanes as well as modification of these compounds and their technical use.